

Fanshawe College

FIRST: Fanshawe Innovation, Research, Scholarship, Teaching

Documentation (Approvals etc...)

Electronics and Embedded Systems
Development

2018

ESD2 Curriculum Modification for 2019-20

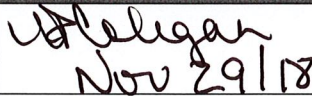


Fanshawe College

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cae_appliedscienceandtech_electronicsemdededsystemsdev_documentation](https://first.fanshawec.ca/cae_appliedscienceandtech_electronicsemdededsystemsdev_documentation)

CURRICULUM MODIFICATION REQUEST FORM

COURSE OR PROGRAM CURRICULUM "RATIONALE FOR CHANGE"

Program Requiring Changes

Program Title: Electronics and Embedded Systems Development		
Program Number: ESD2	Date Submitted: 11/26/2018	
Dean responsible for program: Vertha Coligan	Chair: Lindsay Engel	
Credential Provided: <input type="checkbox"/> Declaration of Academic Achievement <input type="checkbox"/> Local Certificate <input type="checkbox"/> Ontario College Certificate <input type="checkbox"/> Diploma <input type="checkbox"/> Advanced Diploma <input checked="" type="checkbox"/> Grad Certificate <input type="checkbox"/> Degree <input type="checkbox"/> Apprenticeship		
Program Intakes: <input checked="" type="checkbox"/> F <input checked="" type="checkbox"/> W <input checked="" type="checkbox"/> S Other:	Catalogue Year(s) Impacted: 2019 / 2020 ✓	
Residency Requirement: <input checked="" type="checkbox"/> Met or <input type="checkbox"/> Not Met	Date of Last Program Review: None	
<i>I have read the reasons for the change and...</i>		<i>Signature and date</i>
Dean of Faculty (Lead program):	<input checked="" type="checkbox"/> Approve <input type="checkbox"/> Do Not Approve	 Nov 29/18
Dean of Faculty (Affiliate program-impacted by change):	<input type="checkbox"/> Approve <input type="checkbox"/> Do Not Approve	
Dean of Faculty (Affiliate program-impacted by change):	<input type="checkbox"/> Approve <input type="checkbox"/> Do Not Approve	
Senior Vice President Academic (required for major changes and late DAs):	<input type="checkbox"/> Approve <input type="checkbox"/> Do Not Approve	
Director, Centre for Academic Excellence:	<input checked="" type="checkbox"/> Supports <input type="checkbox"/> Does Not Support	
Office of the Registrar:	<input checked="" type="checkbox"/> Supports <input type="checkbox"/> Does Not Support	 Dec. 3/18
Notes: LD course numbers need to be created . OK. EDM. mapping missing - contact Lyndsay ✓ OK. EDM		

Please answer each of the questions below, if applicable. Missing or incomplete information may delay review of the proposed changes.

1.0 Describe proposed change(s). Complete Appendix A (if necessary) and amend SDAR (Refer to Appendix C).

Level 2 changes:

1. ELNC-6009 & ENTP-6001 (⁶⁰⁰⁵ENTP-~~6xxx~~) - Merge these two courses as content is closely related, overlaps and directly supports one another. Similar exercises and evaluations.
2. ⁶⁰¹⁰ELNC-~~6xxx~~ - New course to be developed and inserted into level 2 to support technical skills development and evaluation. This course will assist with content and productivity in other existing level 2 courses.

2.0 Reason/Rationale for Changes

2.1 The reason for the change is based on:

- ☐ A recent program review
- ☐ Program Advisory Committee feedback
- ☒ Student feedback
- ☐ KPI results
- ☐ Accreditation or other regulatory requirements
- ☐ Shared curriculum
- ☐ Trends in the field/industry
- ☒ Other (please describe):

Most students enrolling have limited to no practical skills and must be made to use theoretical content in real world examples. They have been shown experiments but have never performed experiments and documented the process, observations and results, following the scientific method. This is a Post-Grad Cert servicing BA students from university environments.

2.2 Does the change support the College's Strategic Framework (mission, vision, values)?

- ☒ Yes
- ☐ No (If no, please explain)

2.3 What strategic goal(s) does the proposed change support?

- ☒ Goal 1 - Enhance innovative practices for exceptional student learning
- ☐ Goal 2 - Manage enrolment growth
- ☐ Goal 3 - Optimize use of resources

☐ Goal 4 - Build sustainable sources of alternative revenue

3.0 Students

3.1 Will the change affect the cost of the program for students?

☐ Yes

☒ No

3.2 If yes, there will be an additional cost for:

☐ Materials (Include details):

☐ Equipment (Include details):

☐ Other (Please describe):

4.0 Program Learning Outcomes

4.1 Will the proposed change meet the Program Vocational Learning Outcomes? (Complete Appendix B and mark the changes in the mapping [e.g. red font])

☒ Yes

☐ No

4.2 Are there any implications related to progression because of pre-requisite courses (and/or co-requisite courses)?

☒ No

☐ Yes (If yes, please explain)

5.0 Relationships with Other Programs

5.1 Are any of the courses impacted by the change provided by another School (e.g., SLLS, LKSB) and/or delivered at another campus?

☒ No

☐ Yes

5.2 What Schools/Campuses will be impacted by the proposed change?

☐ Lawrence Kinlin School of Business

☐ School of Information Technology

☐ School of Tourism, Hospitality and Culinary Arts

☐ School of Community Studies

☐ School of Health Sciences

☐ School of Nursing

☐ School of Public Safety

☐ School of Contemporary Media

☐ School of Design

☐ School Digital and Performing Arts

- ☐ School of Language and Liberal Studies
- ☐ Donald J. Smith School of Building Technology
- ☐ Norton Wolf School of Aviation Technology
- ☒ School of Applied Sciences and Technology
- ☐ School of Transportation Technology and Apprenticeship
- ☐ Continuing Education
- ☐ Simcoe/Norfolk Regional Campus
- ☐ St Thomas/Elgin Regional Campus
- ☐ Woodstock/Oxford Regional Campus
- ☐ Huron/Bruce Regional Sites

5.3 Will the change affect pathway agreements (e.g., bridging, articulations, laddering, advanced standing) with other Fanshawe program(s) and/or other institution(s)?
(Refer to the pathway agreements listed here: <http://transferagreements.fanshawec.ca/>)

- ☒ No
- ☐ Yes (If yes, indicate when you will notify the other Fanshawe program(s) and/or other institution(s) and the Pathways Coordinator in the Centre for Academic Excellence of the change)

5.4 If this program is a Co-Operative Education program, will the proposed change impact Co-op?

- ☒ No
- ☐ Yes (If yes, consult with the Co-op office prior to submission)

6.0 Resource Implications of Proposed Changes

6.1 Will the proposed change have staffing implications?

- ☐ No
- ☒ Yes (If yes, please explain)
Course development and expertise requirements of faculty.

6.2 Will the proposed change impact any of the Enabling areas?

- ☒ No
- ☐ Yes (If yes, please explain)

6.3 Will the proposed change affect space and/or technology requirements?

- ☐ No
- ☒ Yes (If yes, please explain)
The new course (ELNC-6xxx) course will require Lab hours in our electrical labs.

7.0 General College Requirements

7.1 Are changes consistent with Colleges policies?

- ☒ Yes
☐ No (If no, please explain)

7.2 Will the program meet the General Education requirements (Policy A126) as listed below?

- ☐ No
☒ Yes

Local Certificate, Ontario College Certificate and Graduate Certificate - none required)	Diploma - 3 required (minimum of 1 must be an elective)	Advanced Diploma - 4 required (minimum of 2 must be electives)
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7.3 Will the program have 25% distinct curriculum to meet the Residency Requirement of 25% credit units? Consider all pathway agreements (e.g., bridging, internal articulations, laddering, advanced standing) with other Fanshawe programs and/or other institutions.

- ☐ No
☒ Yes

Note: In accordance with POLICY NUMBER: A122 Graduation from Approved College Programs

...to be eligible for any College Credential a student must be enrolled and complete at least 25% of that program's credit units at Fanshawe College, unless stipulated differently by other approving bodies such as the Postsecondary Education Quality Assessment Board (PEQAB).

7.4 Indicate:

- i) Total program hours before proposed change: 600
ii) Total program hours after proposed change: 600
iii) Level(s) in which the proposed change(s) occurs: 2

7.4.1 Are the total program hours consistent with the requirements as listed below?

- ☒ Yes
☐ No (If no, please explain)

Local Certificate - 300 hours	Ontario College Certificate - 600 hours
Diploma - 1200 to 1400 hours	Advanced Diploma - 1800 to 2100 hours
Graduate Certificate - 600 hours	

COMMS - Vocational Learning Outcomes by Program, Level and Course

Program Name: Electronics and Embedded Systems Development
Program Code: ESD2 (ESD2-MAN-20189)
Academic Year: 2019-2020
Date Generated: 1/8/2019 9:57:51 AM
Only Display Core Courses: ☐

Level 1							
Course Number	Course Name	1	2	3	4	5	6
COMM-6027	Industrial Communications						IB
ELNC-6004	Electronic Components/Process		B	C		C	
ELNC-6005	Elec Documentation & Graphics		B	B		B	
ELNC-6006	Embedded Systems 1		B	B		B	
MGMT-6098	Project Management	B					
Level 2							
Course Number	Course Name	1	2	3	4	5	6
COMM-6028	Project Communications						IBC
ELNC-6007	Embedded Systems 2		C	C		C	
ELNC-6008	Practical Project	C	C	C	C	C	C
ELNC-6010	Circuits & Interfacing	C	C	C			C
ENTP-6005	Business & Sustainability in Technology				C	C	C

New
New

✓
OK

Vocational Learning Outcomes

1	Plan, implement and manage electronic and embedded systems projects in response to stakeholder and industry needs and requirements.
2	Solve complex embedded systems problems through research, experimentation, integration of computer hardware and software, and the use of electronic instrumentation.
3	Design, develop, test, configure and maintain electronic and embedded systems.
4	Develop a business plan integrating marketing and entrepreneurship strategies that support sustainable electronic and embedded technologies for local and international trade.
5	Complete work in compliance with relevant legislation, established standards, policies, regulations, and ethical principles.
6	Prepare and present electronic engineering reports using effective communication strategies.

Legend

I	Introductory
B	Building
C	Culminating

COMMS - Essential Employability Skills by Program, Level and Course

Program Name: Electronics and Embedded Systems Development
 Program Code: ESD2 (ESD2-MAN-20189)
 Academic Year: 2019-2020
 Date Generated: 1/8/2019 10:01:39 AM

Level 1												
Course Number	Course Name	1	2	3	4	5	6	7	8	9	10	11
COMM-6027	Industrial Communications	X	X		X	X	X	X	X	X	X	X
ELNC-6004	Electronic Components/Process			X	X	X					X	X
ELNC-6005	Elec Documentation & Graphics	X		X	X		X	X			X	X
ELNC-6006	Embedded Systems 1			X	X	X	X		X	X	X	X
MGMT-6098	Project Management	X		X		X	X	X		X	X	
Level 2												
Course Number	Course Name	1	2	3	4	5	6	7	8	9	10	11
COMM-6028	Project Communications	X	X		X	X	X	X	X	X	X	X
ELNC-6007	Embedded Systems 2			X	X	X	X	X		X	X	X
ELNC-6008	Practical Project	X	X	X	X	X	X	X	X	X	X	X
ELNC-6010	Circuits & Interfacing			X	X	X	X	X	X	X	X	X
ENTP-6005	Business & Sustainability in Technology	X	X	X	X	X	X	X	X	X	X	X

Essential Employability Skills

1	Communicate clearly, concisely and correctly in the written, spoken and visual form that fulfills the purpose and meets the needs of the audience.
2	Respond to written, spoken or visual messages in a manner that ensures effective communication.
3	Execute mathematical operations accurately.
4	Apply a systematic approach to solve problems.
5	Use a variety of thinking skills to anticipate and solve problems.
6	Locate, select, organize and document information using appropriate technology and information systems.
7	Analyze, evaluate and apply relevant information from a variety of sources.
8	Show respect for diverse opinions, values, belief systems and contributions of others.
9	Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.
10	Manage the use of time and other resources to complete projects.
11	Take responsibility for one's own actions, decisions and consequences.

Course Code	Existing DA Courses	Total Hours	Total Credits	Describe proposed changes	Course Code	Proposed DA Courses	Total Hours	Total Credits
Level 1								
ELNC-6004	Electronic Components & Processes	60	3	No Change	ELNC-6004	Electronic Components & Processes	60	3
ELNC-6005	Electronic Documentation & Graphics	60	3	No Change	ELNC-6005	Electronic Documentation & Graphics	60	3
ELNC-6006	Embedded Systems 1	75	4	No Change	ELNC-6006	Embedded Systems 1	75	4
MGMT-6098	Project Management	45	3	No Change	MGMT-6098	Project Management	45	3
COMM-6027	Industrial Communications	60	4	No Change	COMM-6027	Industrial Communications	60	4
TOTAL		300	17		TOTAL		300	17
Level 2								
ELNC-6007	Embedded Systems 2	75	4	No Change	ELNC-6007	Embedded Systems 2	75	4
ENTP-6001	Business of Electronics	60	4	merge existing with ELNC-6009	ENTP-6005	Business & Sustainability in Technology	45	3
ELNC-6008	Practical Project	75	2.5	No Change	ELNC-6008	Practical Project	75	2.5
ELNC-6009	Sustainability in Technology	45	3	merge existing with ENTP-6001. New course developed with different technical based content.	ELNC-6010	Circuits & Interfacing	60	3
COMM-6028	Project Communications	45	3	No Change	COMM-6028	Project Communications	45	3
TOTAL		300	16.5		TOTAL		300	15.5
Level 3								
TOTAL		0	0		TOTAL		0	0
Level 4								
TOTAL		0	0		TOTAL		0	0
Level 5								
TOTAL		0	0		TOTAL		0	0
Level 6								
TOTAL		0	0		TOTAL		0	0
PROGRAM TOTAL		600	33.5		PROGRAM TOTAL		600	32.5

ENT 6001-45 OLD
ELN C6001-45

ENTP 6005
ELNC 6010
N/change
hours

ESD2

Level 1

	Total Hours	Total Credits
ELNC-6004	60	3
ELNC-6005	60	3
ELNC-6006	75	4
MGMT-6098	45	3
COMM-6027	60	4
Totals	300	17

Level 2

	Total Hours	Total Credits
ELNC-6007	75	4
ENTP-6001	60	4
ELNC-6008	75	2.5
ELNC-6009	45	3
COMM-6028	45	3
ENTP-6002	60	4
ELNC-6003	45	3
Totals	300	16.5

6/16/19
[Signature]

Degree Audit Report

Catalog: 2019/2020 ✓

Program: ESD2

Name: Electronics and Embedded Systems Development

Department: MAN - Applied Science and Technology

Academic Level: PS

CCD: 7 - 2AcadSem/600-700 hrs

Credential: Ontario College Graduate Cert

Grade Scheme: LG2

Major: ESD2 - Electronics & Embedded Sys Dev

Div: MAN - Manufacturing Sciences Division

Co-Op Indicator: N/A

Academic Program Requirement

Total Credits: 33.50

Residency Reqmt: 9.00

GPA Requirement: 2.00

Residency Reqmt GPA: 2.00

Minimum Grade: D

Academic Requirement: ESD2.19 Electronics and Embedded Systems Development

Major: ESD2

Grade Scheme: LG2

Minimum GPA: 2.00

Minimum Grade:

Subrequirement: Level 1

Take all of the following Mandatory Courses:

		Total Hours	Total Credits	GE
ELNC-6004	Electronic Components & Processes	60.00	3.00	
ELNC-6005	Electronic Documentation & Graphics	60.00	3.00	
ELNC-6006	Embedded Systems 1	75.00	4.00	
MGMT-6098	Project Management	45.00	3.00	
COMM-6027	Industrial Communications	60.00	4.00	

Subrequirement: Level 2

Take all of the following Mandatory Courses:

		Total Hours	Total Credits	GE
ELNC-6007	Embedded Systems 2	75.00	4.00	
ENTP-6001	Business of Electronics	60.00	4.00	
ELNC-6008	Practical Project	75.00	2.50	
ELNC-6009	Sustainability in Technology	45.00	3.00	
COMM-6028	Project Communications	45.00	3.00	

↓
see
attached
changes.

changes to
level two

Subrequirement: Program Residency

Students Must Complete a Minimum of 9 credits in this program at Fanshawe College to meet the Program Residency requirement and graduate from this program

Approved By Chair/Manager:

Approved by Dean:

Department and Date:

Date:

General Education Approved By(as appropriate):

Date:

EDM
Jan 9 '19